

10/20/17 "Rudeness is the weak person's imitation of strength" -Eric Hoffer

HW: "Factoring Trinomials by Grouping" w/s  
Test 3 on Monday 10/30

AIM: Is there another way to factor trinomials where  $a \neq 1$ ?

Warm Up:

1) Factor

$6x^2 + x - 2$   
 $ac = -12$   

-12	1
-6	2
-4	3
-3	4
-2	6
-1	12

  
 $6x^2 + 4x - 3x - 2$   
 $2x(3x+2) - 1(3x+2)$   
 $(3x+2)(2x-1)$

Topic

Factoring/rational



$ax^2 + bx + c$



Recall:

Standard form of a quadratic expression  $ax^2 + bx + c$

Steps to use "Grouping" instead of "Trial and Error"

1. Find the product of "a" and "c"
2. List the factor pairs of "ac"
3. Identify the factor pair whose sum is "b"
4. Replace the  $bx$  with 2 terms using the factors from step 3
5. Factor the new expression using "Grouping"

3) Factor

$$12x^2 + 5x - 2$$

$$ac = -24$$

$$-1 \quad 24$$

$$-2 \quad 12$$

$$-3 \quad 8$$

$$-4 \quad 6$$

$$-6 \quad 4$$

$$-8 \quad 3$$

$$-12 \quad 2$$

$$-24 \quad 1$$

$$12x^2 + 5x - 2$$

$$12x^2 - 3x + 8x - 2$$

$$\underline{3x}(4x-1) + \underline{2}(4x-1)$$

↑  
Parenthesis  
Must match

$$(4x-1)(3x+2)$$

Factor each of the following completely: Alt:

4)  $3x^2 + 9x - 12$

$$3(x^2 + 3x - 4)$$

$$3(x+4)(x-1)$$

$ac = -36$

$$3x^2 + 9x - 12$$

$$3x^2 + 12x \quad | \quad -3x - 12$$

$$3x(x+4) \quad | \quad -3(x+4)$$

$$(x+4)(3x-3)$$

$$(x+4)(3)(x-1)$$

$$3(x+4)(x-1)$$

5)  $6x^2 - 4x - 16$

6)  $36x^3 + 33x^2 + 6x$

$$7) -2x^3 - 6x^2 + 56x$$